

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 130 094 A2

#8/attached

10/062548

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
05.09.2001 Bulletin 2001/36

(21) Application number: 00114089.6

(22) Date of filing: 07.07.2000

(51) Int Cl.7: C12N 15/12, C12N 15/11,
C12N 15/10, C12N 15/70,
C12N 15/85, C12N 5/10,
C12N 1/21, C07K 14/47,
C07K 16/18, C12Q 1/68

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: 08.07.1999 JP 19448699
11.01.2000 JP 2000118774
02.05.2000 JP 2000183765

(71) Applicant: Helix Research Institute
Kisarazu-shi, Chiba 292-0812 (JP)

(72) Inventors:
• Ota, Toshio
Fujisawa-shi, Kanagawa 251-0042 (JP)
• Nishikawa, Tetsuo
Tokyo 173-0013 (JP)
• Isogai, Takao
Inashiki-gun, Ibaraki 300-0303 (JP)
• Hayashi, Koji
Ichihara-shi, Chiba 299-0125 (JP)
• Ishii, Shizuko
Kisarazu-shi, Chiba 292-0812 (JP)

• Kawai, Yuri
Kisarazu-shi, Chiba 292-0812 (JP)
• Wakamatsu, Ai
Kisarazu-shi, Chiba 292-0014 (JP)
• Sugiyama, Tomoyasu
Kisarazu-shi, Chiba 292-0045 (JP)
• Nagai, Keiichi
Higashiyamato-shi, Tokyo 207-0022 (JP)
• Kojima, Shinichi
Kisarazu-shi, Chiba 292-0052 (JP)
• Otsuki, Tetsuji
Kisarazu-shi, Chiba 292-0055 (JP)
• Koga, Hisashi
Kisarazu-shi, Chiba 292-0055 (JP)

(74) Representative: VOSSIUS & PARTNER
Siebertstrasse 4
81675 München (DE)

Remarks:

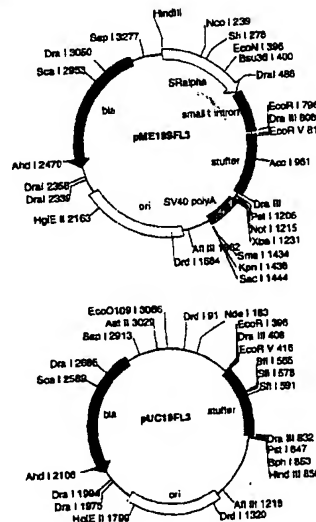
The sequence listing, which is published as annex to the application documents, was filed after the date of filing. The applicant has declared that it does not include matter which goes beyond the content of the application as filed.

(54) Primers for synthesizing full length cDNA clones and their use

(57) Primers for synthesizing full length cDNAs and their use are provided.

830 cDNA encoding a human protein has been isolated and nucleotide sequences of 5'- and 3'-ends of the cDNA have been determined. Furthermore, primers for synthesizing the full length cDNA have been provided to clarify the function of the protein encoded by the cDNA. The full length cDNA of the present invention containing the translation start site provides information useful for analyzing the functions of the protein.

Figure 1



EP 1 130 094 A2

Description

FIELD OF THE INVENTION

- 5 [0001] The present invention relates to a polynucleotide encoding a novel protein, a protein encoded by the polynucleotide, and new uses of these.

BACKGROUND OF THE INVENTION

- 10 [0002] Currently, the sequencing projects, the determination and analysis of the genomic DNA of various living organisms have been in progress all over the world. The whole genomic sequences of more than 10 species of prokaryotes, a lower eukaryote, yeast, and a multicellular eukaryote, *C. elegans* are already determined. As to human genome, which is supposed to be composed of three thousand million base pairs, the world wide cooperative projects have been under way to analyze it, and the whole structure is predicted to be determined by the years 2002-2003. The aim of the determination of genomic sequence is to reveal the functions of all genes and their regulation and to understand living organisms as a network of interactions between genes, proteins, cells or individuals through deducing the information in a genome, which is a blueprint of the highly complicated living organisms. To understand living organisms by utilizing the genomic information from various species is not only important as an academic subject, but also socially significant from the viewpoint of industrial application.
- 15 [0003] However, determination of genomic sequences itself cannot identify the functions of all genes. For example, as for yeast, only the function of approximately half of the 6000 genes, which is predicted based on the genomic sequence, was able to be deduced. As for human, the number of the genes is predicted to be approximately one hundred thousand. Therefore, it is desirable to establish "a high throughput analysis system of the gene functions" which allows us to identify rapidly and efficiently the functions of vast amounts of the genes obtained by the genomic sequencing.
- 20 [0004] Many genes in the eukaryotic genome are split by introns into multiple exons. Thus, it is difficult to predict correctly the structure of encoded protein solely based on genomic information. In contrast, cDNA, which is produced from mRNA that lacks introns, encodes a protein as a single continuous amino acid sequence and allows us to identify the primary structure of the protein easily. In human cDNA research, to date, more than one million ESTs (Expression Sequence Tags) are publicly available, and the ESTs presumably cover not less than 80% of all human genes.
- 30 [0005] The information of ESTs is utilized for analyzing the structure of human genome, or for predicting the exons of genomic sequences or their expression profile. However, many human ESTs have been derived from proximal regions to the 3'-end of cDNA, and information around the 5'-end of mRNA is extremely little. Among these human cDNAs, the number of the corresponding mRNAs whose encoding protein sequences are deduced is approximately 7000, and further, the number of full-length therein is only 5500. Thus, even including cDNA registered as EST, the percentage of human cDNA obtained so far is estimated to be 10-15% of all the genes.
- 35 [0006] It is possible to identify the transcription start site of mRNA on the genomic sequence based on the 5'-end sequence of a full-length cDNA, and to analyze factors involved in the stability of mRNA that is contained in the cDNA, or in its regulation of expression at the translation stage. Also, since a full-length cDNA contains ATG, the translation start site, in the 5'-region, it can be translated into a protein in a correct frame. Therefore, it is possible to produce a large amount of the protein encoded by the cDNA or to analyze biological activity of the expressed protein by utilizing an appropriate expression system. Thus, analysis of a full-length cDNA provides valuable information which complements the information from genome sequencing. Also, full-length cDNA clones that can be expressed are extremely valuable in empirical analysis of gene function and in industrial application.
- 40 [0007] In particular, human secretory proteins or membrane proteins are would be useful by itself as a medicine like tissue plasminogen activator (TPA), or as a target of medicines like membrane receptors. In addition, genes for signal transduction-associated proteins (protein kinases, etc.), glycoprotein-associated proteins, transcription-associated proteins, and disease-associated proteins form a gene group rich in genes whose relationships to human diseases have been elucidated.
- 45 [0008] Therefore, it has great significance to isolate novel full-length cDNA clones of human, only few of which has been isolated. Especially, isolation of a novel cDNA clone encoding a secretory protein or membrane protein is desired since the protein itself would be useful as a medicine, and also the clones potentially include a gene associated with diseases. In addition, genes encoding proteins that are associated with signal transduction, glycoprotein, transcription, or diseases are expected to be useful as target molecules for therapy, or as medicines themselves. These genes form a gene group predicted to be strongly associated with diseases. Thus, identification of the full-length cDNA clones encoding those proteins has great significance.
- 50
- 55

SUMMARY OF THE INVENTION

[0009] An objective of the present invention is to provide a primer that enables synthesizing polynucleotide from human, the resulting polynucleotide or its clone, and a protein encoded by the polynucleotide.

[0010] The inventors have developed a method for efficiently cloning a human full-length cDNA that is predicted by the ATGpr etc. to be a full-length cDNA clone, from a full-length-enriched cDNA library that is synthesized by the oligo-capping method. Then, the inventors determined the nucleotide sequence of the obtained cDNA clones from both 5'- and 3'- ends. By utilizing the sequences, the inventors selected clones that were expected to contain a signal by the PSORT (Nakai K. and Kanehisa M. (1992) *Genomics* 14: 897-911), and obtained clones that contain a cDNA encoding a secretory protein or membrane protein. Moreover, the inventors specifically selected full-length cDNA clones that encode secretory or membrane proteins, signal transduction-associated proteins, glycoprotein-associated proteins, transcription-associated proteins, or disease-associated proteins from clones homologous to the clones in the Swiss-Prot (http://www.ebi.ac.uk/ebi_docs/SwissProt_db/swisshome.html) according to the keywords of SwissProt.

[0011] The full-length cDNA clones of the present invention have high fullness ratio since these were obtained by the combination of (1) construction of a full-length-enriched cDNA library that is synthesized by the oligo-capping method, and (2) a system in which fullness ratio is evaluated from the nucleotide sequence of the 5'-end (in this system, clones are selected based on the estimation by the ATGpr, following the removal of sequences judged not to be full-length when compared with ESTs). However, the primers of the present invention enable obtaining full-length cDNA easily without any special methods mentioned above.

[0012] Homology analysis in which the analysis is carried out against a non-full-length cDNA fragment to postulate the function of a protein encoded by said fragment, is being commonly performed. However, since such analysis is based on the information of the fragment, it is not clear as to whether this fragment corresponds to a part that is functionally important in the protein. In other words, the reliability of the homology analysis based on the information of a fragment is doubtful, as information relating to the structure of the whole protein is not available. However, the homology analysis of the present invention is conducted based on the information of a full-length cDNA comprising the whole coding region of the cDNA, and therefore, the homology of various portions of the protein can be analyzed. Hence, the reliability of the homology analysis has been dramatically improved in the present invention.

[0013] The inventors completed the invention by finding that it is possible to synthesize a novel full-length cDNA by using the combination of a primer that is designed based on the nucleotide sequence of the 5'-ends of the selected full-length cDNA clones and any of an oligo-dT primer or a 3'-primer that is designed based on the nucleotide sequence of the 3'-ends of the selected clones.

[0014] Thus, the present invention relates to primers described below, a method for synthesizing a polynucleotide using the primers, and polynucleotides obtained by the method.

[0015] First, the present invention relates to

(1) use of an oligonucleotide as a primer for synthesizing the polynucleotide comprising the nucleotide sequence set forth in any one of SEQ ID NOs: 1-829 and 2545, or the complementary strand thereof, wherein said oligonucleotide is complementary to said polynucleotide or the complementary strand thereof and comprises at least 15 nucleotides;

(2) a primer set for synthesizing polynucleotides, the primer set comprising an oligo-dT primer and an oligonucleotide complementary to the complementary strand of the polynucleotide comprising the nucleotide sequence set forth in any one of SEQ ID NOs: 1-829 and 2545, wherein said oligonucleotide comprises at least 15 nucleotides; and

(3) A primer set for synthesizing polynucleotides, the primer set comprising a combination of an oligonucleotide comprising a nucleotide sequence complementary to the complementary strand of the polynucleotide comprising a 5'-end nucleotide sequence and an oligonucleotide comprising a nucleotide sequence complementary to the polynucleotide comprising a 3'-end nucleotide sequence, wherein said oligonucleotides comprise at least 15 nucleotides and wherein said combination of 5'-end nucleotide sequence / 3'-end nucleotide sequence is selected from the combinations of 5'-end nucleotide sequence / 3'-end nucleotide sequence set forth in the SEQ ID NOs in Table 1.

[0016] Table 1 shows names of clones obtained in the examples described later, comprising the polynucleotide of the present invention (830 clones), names of nucleotide sequences at the 5'-end and 3'-end of the full-length cDNA, and their corresponding SEQ ID NOs. A blank indicates that the of the 3'-end sequence corresponding to the 5'-end sequence has not been determined the same clone.

[0017] The SEQ ID NO of a 5'-end sequence is shown on the right side of the name of the 5'-end sequence, and the SEQ ID NO of a 3'-end sequence is shown on the right side of the name of the 3'-end sequence.

Table 1

Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
BNGH41000020	F-BNGH41000020	1		
BNGH41000087	F-BNGH41000087	2		
BNGH41000091	F-BNGH41000091	3		
HEMBA1000006	F-HEMBA1000006	4	R-HEMBA1000006	830
HEMBA1000121	F-HEMBA1000121	5	R-HEMBA1000121	831
HEMBA1000128	F-HEMBA1000128	6	R-HEMBA1000128	832
HEMBA1000275	F-HEMBA1000275	7	R-HEMBA1000275	833
HEMBA1000300	F-HEMBA1000300	8	R-HEMBA1000300	834
HEMBA1000349	F-HEMBA1000349	9	R-nnnnnnnnnnnnn	835
HEMBA1000443	F-HEMBA1000443	10		
HEMBA1000462	F-HEMBA1000462	11	R-HEMBA1000462	836
HEMBA1000477	F-HEMBA1000477	12	R-HEMBA1000477	837
HEMBA1000590	F-HEMBA1000590	13	R-HEMBA1000590	838
HEMBA1000634	F-HEMBA1000634	14	R-HEMBA1000634	839
HEMBA1000671	F-HEMBA1000671	15	R-HEMBA1000671	840
HEMBA1000713	F-HEMBA1000713	16	R-HEMBA1000713	841
HEMBA1000732	F-HEMBA1000732	17	R-HEMBA1000732	842
HEMBA1000745	F-HEMBA1000745	18	R-nnnnnnnnnnnnn	843
HEMBA1000835	F-HEMBA1000835	19		
HEMBA1000875	F-HEMBA1000875	20	R-HEMBA1000875	844
HEMBA1000907	F-HEMBA1000907	21		
HEMBA1000940	F-HEMBA1000940	22	R-HEMBA1000940	845
HEMBA1000962	F-HEMBA1000962	23	R-HEMBA1000962	846
HEMBA1001184	F-HEMBA1001184	24	R-HEMBA1001184	847
HEMBA1001221	F-HEMBA1001221	25	R-HEMBA1001221	848
HEMBA1001228	F-HEMBA1001228	26	R-HEMBA1001228	849
HEMBA1001272	F-HEMBA1001272	27	R-HEMBA1001272	850
HEMBA1001296	F-HEMBA1001296	28	R-HEMBA1001296	851
HEMBA1001297	F-HEMBA1001297	29	R-HEMBA1001297	852
HEMBA1001390	F-HEMBA1001390	30	R-HEMBA1001390	853
HEMBA1001563	F-HEMBA1001563	31	R-HEMBA1001563	854
HEMBA1001621	F-HEMBA1001621	32	R-HEMBA1001621	855
HEMBA1001878	F-HEMBA1001878	33	R-HEMBA1001878	856
HEMBA1001886	F-HEMBA1001886	34	R-HEMBA1001886	857
HEMBA1002048	F-HEMBA1002048	35	R-HEMBA1002048	858
HEMBA1002131	F-HEMBA1002131	36	R-HEMBA1002131	859
HEMBA1002163	F-HEMBA1002163	37	R-HEMBA1002163	860
HEMBA1002164	F-HEMBA1002164	38		
HEMBA1002167	F-HEMBA1002167	39	R-HEMBA1002167	861
HEMBA1002178	F-HEMBA1002178	40	R-HEMBA1002178	862
HEMBA1002195	F-HEMBA1002195	41	R-HEMBA1002195	863
HEMBA1002227	F-HEMBA1002227	42	R-HEMBA1002227	864
HEMBA1002239	F-HEMBA1002239	43		
HEMBA1002316	F-HEMBA1002316	44	R-HEMBA1002316	865
HEMBA1002420	F-HEMBA1002420	45	R-HEMBA1002420	866
HEMBA1002421	F-HEMBA1002421	46	R-HEMBA1002421	867
HEMBA1002524	F-HEMBA1002524	47	R-HEMBA1002524	868

Table 1 (continued)

Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
HEMBA1002551	F-HEMBA1002551	48	R-HEMBA1002551	869
HEMBA1002767	F-HEMBA1002767	49	R-HEMBA1002767	870
HEMBA1002985	F-HEMBA1002985	50	R-HEMBA1002985	871
HEMBA1002992	F-HEMBA1002992	51		
HEMBA1003047	F-HEMBA1003047	52	R-HEMBA1003047	872
HEMBA1003072	F-HEMBA1003072	53	R-HEMBA1003072	873
HEMBA1003101	F-HEMBA1003101	54	R-HEMBA1003101	874
HEMBA1003120	F-HEMBA1003120	55	R-HEMBA1003120	875
HEMBA1003230	F-HEMBA1003230	56	R-HEMBA1003230	876
HEMBA1003294	F-HEMBA1003294	57	R-HEMBA1003294	877
HEMBA1003315	F-HEMBA1003315	58	R-HEMBA1003315	878
HEMBA1003392	F-HEMBA1003392	59	R-HEMBA1003392	879
HEMBA1003399	F-HEMBA1003399	60	R-HEMBA1003399	880
HEMBA1003487	F-HEMBA1003487	61	R-HEMBA1003487	881
HEMBA1003497	F-HEMBA1003497	62	R-HEMBA1003497	882
HEMBA1003530	F-HEMBA1003530	63	R-HEMBA1003530	883
HEMBA1003602	F-HEMBA1003602	64	R-HEMBA1003602	884
HEMBA1003732	F-HEMBA1003732	65	R-HEMBA1003732	885
HEMBA1003945	F-HEMBA1003945	66	R-HEMBA1003945	886
HEMBA1004007	F-HEMBA1004007	67	R-HEMBA1004007	887
HEMBA1004067	F-HEMBA1004067	68		
HEMBA1004085	F-HEMBA1004085	69	R-HEMBA1004085	888
HEMBA1004110	F-HEMBA1004110	70	R-nnnnnnnnnnnnn	889
HEMBA1004250	F-HEMBA1004250	71	R-HEMBA1004250	890
HEMBA1004391	F-HEMBA1004391	72	R-HEMBA1004391	891
HEMBA1004444	F-HEMBA1004444	73	R-HEMBA1004444	892
HEMBA1004454	F-HEMBA1004454	74	R-HEMBA1004454	893
HEMBA1004505	F-HEMBA1004505	75	R-HEMBA1004505	894
HEMBA1004785	F-HEMBA1004785	76	R-HEMBA1004785	895
HEMBA1004797	F-HEMBA1004797	77	R-HEMBA1004797	896
HEMBA1004952	F-HEMBA1004952	78	R-HEMBA1004952	897
HEMBA1004971	F-HEMBA1004971	79	R-HEMBA1004971	898
HEMBA1004982	F-HEMBA1004982	80	R-HEMBA1004982	899
HEMBA1005070	F-HEMBA1005070	81	R-HEMBA1005070	900
HEMBA1005084	F-HEMBA1005084	82	R-HEMBA1005084	901
HEMBA1005145	F-HEMBA1005145	83	R-HEMBA1005145	902
HEMBA1005230	F-HEMBA1005230	84	R-HEMBA1005230	903
HEMBA1005246	F-HEMBA1005246	85	R-HEMBA1005246	904
HEMBA1005267	F-HEMBA1005267	86	R-HEMBA1005267	905
HEMBA1005337	F-HEMBA1005337	87	R-HEMBA1005337	906
HEMBA1005430	F-HEMBA1005430	88	R-HEMBA1005430	907
HEMBA1005449	F-HEMBA1005449	89	R-HEMBA1005449	908
HEMBA1005489	F-HEMBA1005489	90	R-HEMBA1005489	909
HEMBA1005522	F-HEMBA1005522	91	R-HEMBA1005522	910
HEMBA1005545	F-HEMBA1005545	92	R-HEMBA1005545	911
HEMBA1005698	F-HEMBA1005698	93	R-HEMBA1005698	912
HEMBA1005913	F-HEMBA1005913	94	R-HEMBA1005913	913
HEMBA1005929	F-HEMBA1005929	95	R-HEMBA1005929	914

Table 1 (continued)

Correspondence between names of clone and the sequence name, and the SEQ ID.				
	Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence SEQ ID
5	HEMBA1005945	F-HEMBA1005945	96	R-HEMBA1005945 915
	HEMBA1006016	F-HEMBA1006016	97	R-HEMBA1006016 916
	HEMBA1006171	F-HEMBA1006171	98	R-HEMBA1006171 917
	HEMBA1006276	F-HEMBA1006276	99	R-HEMBA1006276 918
	HEMBA1006299	F-HEMBA1006299	100	R-HEMBA1006299 919
10	HEMBA1006311	F-HEMBA1006311	101	R-HEMBA1006311 920
	HEMBA1006335	F-HEMBA1006335	102	R-HEMBA1006335 921
	HEMBA1006357	F-HEMBA1006357	103	R-HEMBA1006357 922
	HEMBA1006430	F-HEMBA1006430	104	R-HEMBA1006430 923
	HEMBA1006482	F-HEMBA1006482	105	R-HEMBA1006482 924
15	HEMBA1006517	F-HEMBA1006517	106	R-HEMBA1006517 925
	HEMBA1006544	F-HEMBA1006544	107	R-HEMBA1006544 926
	HEMBA1006572	F-HEMBA1006572	108	R-HEMBA1006572 927
	HEMBA1006658	F-HEMBA1006658	109	R-HEMBA1006658 928
20	HEMBA1006707	F-HEMBA1006707	110	R-HEMBA1006707 929
	HEMBA1006724	F-HEMBA1006724	111	R-HEMBA1006724 930
	HEMBA1006749	F-HEMBA1006749	112	R-HEMBA1006749 931
	HEMBA1006770	F-HEMBA1006770	113	R-HEMBA1006770 932
	HEMBA1006902	F-HEMBA1006902	114	R-HEMBA1006902 933
25	HEMBA1006912	F-HEMBA1006912	115	R-HEMBA1006912 934
	HEMBA1006916	F-HEMBA1006916	116	R-HEMBA1006916 935
	HEMBA1006960	F-HEMBA1006960	117	R-HEMBA1006960 936
	HEMBA1007013	F-HEMBA1007013	118	R-HEMBA1007013 937
30	HEMBA1007057	F-HEMBA1007057	119	R-HEMBA1007057 938
	HEMBA1007063	F-HEMBA1007063	120	R-HEMBA1007063 939
	HEMBA1007226	F-HEMBA1007226	121	
	HEMBA1007241	F-HEMBA1007241	122	R-HEMBA1007241 940
	HEMBA1007291	F-HEMBA1007291	123	R-HEMBA1007291 941
35	HEMBA1007332	F-HEMBA1007332	124	R-HEMBA1007332 942
	HEMBA1000106	F-HEMBA1000106	125	R-HEMBA1000106 943
	HEMBA1000276	F-HEMBA1000276	126	R-HEMBA1000276 944
	HEMBA1000309	F-HEMBA1000309	127	R-HEMBA1000309 945
40	HEMBA1000407	F-HEMBA1000407	128	R-HEMBA1000407 946
	HEMBA1000447	F-HEMBA1000447	129	R-HEMBA1000447 947
	HEMBA1000542	F-HEMBA1000542	130	R-HEMBA1000542 948
	HEMBA1000567	F-HEMBA1000567	131	R-HEMBA1000567 949
45	HEMBA1000642	F-HEMBA1000642	132	R-HEMBA1000642 950
	HEMBA1000668	F-HEMBA1000668	133	R-HEMBA1000668 951
	HEMBA1000679	F-HEMBA1000679	134	R-HEMBA1000679 952
	HEMBA1000881	F-HEMBA1000881	135	R-HEMBA1000881 953
	HEMBA1000905	F-HEMBA1000905	136	R-HEMBA1000905 954
50	HEMBA1001026	F-HEMBA1001026	137	R-HEMBA1001026 955
	HEMBA1001048	F-HEMBA1001048	138	R-HEMBA1001048 956
	HEMBA1001200	F-HEMBA1001200	139	R-HEMBA1001200 957
	HEMBA1001407	F-HEMBA1001407	140	R-HEMBA1001407 958
	HEMBA1001530	F-HEMBA1001530	141	R-HEMBA1001530 959
55	HEMBA1001547	F-HEMBA1001547	142	R-HEMBA1001547 960
	HEMBA1001573	F-HEMBA1001573	143	R-HEMBA1001573 961

Table 1 (continued)

Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
HEMBB1001847	F-HEMBB1001847	144	R-HEMBB1001847	962
HEMBB1001959	F-HEMBB1001959	145	R-HEMBB1001959	963
HEMBB1001978	F-HEMBB1001978	146	R-HEMBB1001978	964
HEMBB1002039	F-HEMBB1002039	147	R-HEMBB1002039	965
HEMBB1002041	F-HEMBB1002041	148	R-HEMBB1002041	966
HEMBB1002051	F-HEMBB1002051	149	R-HEMBB1002051	967
HEMBB1002120	F-HEMBB1002120	150	R-HEMBB1002120	968
HEMBB1002162	F-HEMBB1002162	151	R-HEMBB1002162	969
HEMBB1002228	F-HEMBB1002228	152	R-HEMBB1002228	970
HEMBB1002245	F-HEMBB1002245	153	R-HEMBB1002245	971
HEMBB1002302	F-HEMBB1002302	154	R-HEMBB1002302	972
HEMBB1002427	F-HEMBB1002427	155	R-HEMBB1002427	973
HEMBB1002465	F-HEMBB1002465	156	R-HEMBB1002465	974
HEMBB1002661	F-HEMBB1002661	157	R-HEMBB1002661	975
HEMBB1002663	F-HEMBB1002663	158	R-HEMBB1002663	976
HEMBB1002693	F-HEMBB1002693	159	R-HEMBB1002693	977
MAMMA 1000046	F-MAMMA1000046	160	R-MAMMA1000046	978
MAMMA1000102	F-MAMMA1000102	161	R-MAMMA1000102	979
MAMMA 1000106	F-MAMMA1000106	162	R-MAMMA1000106	980
MAMMA1000118	F-MAMMA1000118	163	R-MAMMA1000118	981
MAMMA1000141	F-MAMMA1000141	164	R-MAMMA1000141	982
MAMMA1000204	F-MAMMA1000204	165	R-MAMMA1000204	983
MAMMA1000226	F-MAMMA1000226	166	R-MAMMA1000226	984
MAMMA1000403	F-MAMMA1000403	167	R-MAMMA1000403	985
MAMMA1000449	F-MAMMA1000449	168	R-MAMMA1000449	986
MAMMA1000457	F-MAMMA1000457	169	R-MAMMA1000457	987
MAMMA1000473	F-MAMMA1000473	170	R-MAMMA1000473	988
MAMMA1000496	F-MAMMA1000496	171	R-MAMMA1000496	989
MAMMA1000528	F-MAMMA1000528	172	R-MAMMA1000528	990
MAMMA1000591	F-MAMMA1000591	173	R-MAMMA1000591	991
MAMMA 1000614	F-MAMMA1000614	174	R-MAMMA1000614	992
MAMMA1000652	F-MAMMA1000652	175	R-MAMMA1000652	993
MAMMA1000681	F-MAMMA1000681	176	R-MAMMA1000681	994
MAMMA 1000706	F-MAMMA1000706	177	R-MAMMA1000706	995
MAMMA 1000788	F-MAMMA1000788	178	R-MAMMA1000788	996
MAMMA 1000810	F-MAMMA1000810	179	R-MAMMA1000810	997
MAMMA1000814	F-MAMMA1000814	180	R-MAMMA1000814	998
MAMMA1000881	F-MAMMA1000881	181	R-MAMMA1000881	999
MAMMA1000986	F-MAMMA1000986	182	R-MAMMA1000986	1000
MAMMA 1000994	F-MAMMA1000994	183	R-MAMMA1000994	1001
MAMMA1001043	F-MAMMA1001043	184	R-MAMMA1001043	1002
MAMMA1001066	F-MAMMA1001066	185	R-MAMMA1001066	1003
MAMMA1001094	F-MAMMA1001094	186	R-MAMMA1001094	1004
MAMMA1001141	F-MAMMA1001141	187	R-MAMMA1001141	1005
MAMMA1001150	F-MAMMA1001150	188	R-MAMMA1001150	1006
MAMMA1001237	F-MAMMA1001237	189	R-MAMMA1001237	1007
MAMMA1001284	F-MAMMA1001284	190	R-MAMMA1001284	1008
MAMMA1001310	F-MAMMA1001310	191	R-MAMMA1001310	1009

Table 1 (continued)

Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
5	MAMMA1001344	192		
	MAMMA1001418	193	R-MAMMA1001418	1010
	MAMMA1001532	194	R-MAMMA1001532	1011
	MAMMA1001609	195	R-MAMMA1001609	1012
	MAMMA 1001615	196	R-MAMMA1001615	1013
10	MAMMA 1001623	197	R-MAMMA1001623	1014
	MAMMA1001634	198	R-MAMMA1001634	1015
	MAMMA 1001893	199	R-MAMMA1001893	1016
	MAMMA1001901	200	R-MAMMA1001901	1017
15	MAMMA 1001957	201	R-MAMMA1001957	1018
	MAMMA1001978	202	R-MAMMA1001978	1019
	MAMMA1002070	203	R-MAMMA1002070	1020
	MAMMA1002080	204	R-MAMMA1002080	1021
	MAMMA 1002087	205	R-MAMMA1002087	1022
20	MAMMA1002091	206		
	MAMMA 1002095	207	R-MAMMA1002095	1023
	MAMMA 1002128	208	R-MAMMA1002128	1024
	MAMMA1002142	209	R-MAMMA1002142	1025
25	MAMMA1002165	210	R-MAMMA1002165	1026
	MAMMA 1002205	211	R-MAMMA1002205	1027
	MAMMA 1002224	212	R-MAMMA1002224	1028
	MAMMA1002234	213	R-MAMMA1002234	1029
	MAMMA1002586	214	R-MAMMA1002586	1030
30	MAMMA1002633	215	R-MAMMA1002633	1031
	MAMMA1003126	216	R-MAMMA1003126	1032
	NT2RM1000407	217		
	NT2RM1000462	218		
35	NT2RM1000542	219		
	NT2RM1000580	220		
	NT2RM1000789	221		
	NT2RM1000855	222		
	NT2RM1000858	223		
40	NT2RM1000899	224		
	NT2RM2000241	225		
	NT2RM2000306	226		
	NT2RM2000410	227		
45	NT2RM2000423	228		
	NT2RM2000497	229		
	NT2RM2000514	230		
	NT2RM2000565	231		
	NT2RM2000582	232		
50	NT2RM2000589	233		
	NT2RM2000622	234		
	NT2RM2000632	235		
	NT2RM2000773	236		
55	NT2RM2001126	237		
	NT2RM2001558	238		
	NT2RM2001626	239		

Table 1 (continued)

Correspondence between names of clone and the sequence name, and the SEQ ID.				
	Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence SEQ ID
5	NT2RM2001643	F-NT2RM2001643	240	
	NT2RM2001738	F-NT2RM2001738	241	
	NT2RM2001767	F-NT2RM2001767	242	
	NT2RM2001792	F-NT2RM2001792	243	
	NT2RM2001818	F-NT2RM2001818	244	
10	NT2RM2001902	F-NT2RM2001902	245	
	NT2RM2001939	F-NT2RM2001939	246	
	NT2RM2001941	F-NT2RM2001941	247	
	NT2RM4000100	F-NT2RM4000100	248	R-NT2RM4000100 1033
15	NT2RM4000115	F-NT2RM4000115	249	R-NT2RM4000115 1034
	NT2RM4000198	F-NT2RM4000198	250	R-NT2RM4000198 1035
	NT2RM4000284	F-NT2RM4000284	251	R-NT2RM4000284 1036
	NT2RM4000295	F-NT2RM4000295	252	R-NT2RM4000295 1037
	NT2RM4000326	F-NT2RM4000326	253	R-NT2RM4000326 1038
20	NT2RM4000417	F-NT2RM4000417	254	R-NT2RM4000417 1039
	NT2RM4000444	F-NT2RM4000444	255	R-NT2RM4000444 1040
	NT2RM4000587	F-NT2RM4000587	256	R-NT2RM4000587 1041
	NT2RM4000593	F-NT2RM4000593	257	R-NT2RM4000593 1042
25	NT2RM4000648	F-NT2RM4000648	258	R-NT2RM4000648 1043
	NT2RM4000761	F-NT2RM4000761	259	R-NT2RM4000761 1044
	NT2RM4000965	F-NT2RM4000965	260	R-NT2RM4000965 1045
	NT2RM4000997	F-NT2RM4000997	261	R-NT2RM4000997 1046
	NT2RM4001321	F-NT2RM4001321	262	R-NT2RM4001321 1047
30	NT2RM4001325	F-NT2RM4001325	263	R-NT2RM4001325 1048
	NT2RM4001377	F-NT2RM4001377	264	R-NT2RM4001377 1049
	NT2RM4001735	F-NT2RM4001735	265	R-NT2RM4001735 1050
	NT2RM4001768	F-NT2RM4001768	266	R-NT2RM4001768 1051
35	NT2RM4001843	F-NT2RM4001843	267	R-NT2RM4001843 1052
	NT2RM4002352	F-NT2RM4002352	268	R-NT2RM4002352 1053
	NT2RP1000002	F-NT2RP1000002	269	
	NT2RP1000050	F-NT2RP1000050	270	
	NT2RP1000181	F-NT2RP1000181	271	
40	NT2RP1000239	F-NT2RP1000239	272	
	NT2RP1000261	F-NT2RP1000261	273	
	NT2RP1000271	F-NT2RP1000271	274	
	NT2RP1000300	F-NT2RP1000300	275	
45	NT2RP1000325	F-NT2RP1000325	276	
	NT2RP1000448	F-NT2RP1000448	277	
	NT2RP1000465	F-NT2RP1000465	278	
	NT2RP1000468	F-NT2RP1000468	279	
	NT2RP1000551	F-NT2RP1000551	280	
50	NT2RP1000579	F-NT2RP1000579	281	
	NT2RP1000613	F-NT2RP1000613	282	
	NT2RP1000679	F-NT2RP1000679	283	
	NT2RP1000740	F-NT2RP1000740	284	
55	NT2RP1000903	F-NT2RP1000903	285	
	NT2RP1000981	F-NT2RP1000981	286	
	NT2RP1001004	F-NT2RP1001004	287	

Table 1 (continued)

Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
5 NT2RP1001020	F-NT2RP1001020	288		
NT2RP1001031	F-NT2RP1001031	289		
NT2RP1001563	F-NT2RP1001563	290		
NT2RP2000092	F-NT2RP2000092	291	R-NT2RP2000092	1054
NT2RP2000178	F-NT2RP2000178	292	R-NT2RP2000178	1055
10 NT2RP2000240	F-NT2RP2000240	293	R-NT2RP2000240	1056
NT2RP2000394	F-NT2RP2000394	294	R-NT2RP2000394	1057
NT2RP2000447	F-NT2RP2000447	295	R-NT2RP2000447	1058
NT2RP2000479	F-NT2RP2000479	296	R-NT2RP2000479	1059
15 NT2RP2000514	F-NT2RP2000514	297	R-NT2RP2000514	1060
NT2RP2000533	F-NT2RP2000533	298	R-NT2RP2000533	1061
NT2RP2000610	F-NT2RP2000610	299		
NT2RP2000616	F-NT2RP2000616	300	R-NT2RP2000616	1062
NT2RP2000649	F-NT2RP2000649	301	R-NT2RP2000649	1063
20 NT2RP2000663	F-NT2RP2000663	302	R-NT2RP2000663	1064
NT2RP2000694	F-NT2RP2000694	303		
NT2RP2000712	F-NT2RP2000712	304	R-NT2RP2000712	1065
NT2RP2000739	F-NT2RP2000739	305	R-NT2RP2000739	1066
25 NT2RP2000818	F-NT2RP2000818	306	R-NT2RP2000818	1067
NT2RP2000903	F-NT2RP2000903	307	R-NT2RP2000903	1068
NT2RP2001200	F-NT2RP2001200	308	R-NT2RP2001200	1069
NT2RP2001223	F-NT2RP2001223	309	R-NT2RP2001223	1070
NT2RP2001276	F-NT2RP2001276	310	R-NT2RP2001276	1071
30 NT2RP2001388	F-NT2RP2001388	311	R-NT2RP2001388	1072
NT2RP2001469	F-NT2RP2001469	312	R-NT2RP2001469	1073
NT2RP2001480	F-NT2RP2001480	313	R-NT2RP2001480	1074
NT2RP2001495	F-NT2RP2001495	314	R-NT2RP2001495	1075
35 NT2RP2001514	F-NT2RP2001514	315	R-NT2RP2001514	1076
NT2RP2001529	F-NT2RP2001529	316		
NT2RP2001538	F-NT2RP2001538	317	R-NT2RP2001538	1077
NT2RP2001562	F-NT2RP2001562	318	R-NT2RP2001562	1078
NT2RP2001662	F-NT2RP2001662	319	R-NT2RP2001662	1079
40 NT2RP2001755	F-NT2RP2001755	320	R-NT2RP2001755	1080
NT2RP2001769	F-NT2RP2001769	321	R-NT2RP2001769	1081
NT2RP2001817	F-NT2RP2001817	322	R-NT2RP2001817	1082
NT2RP2001878	F-NT2RP2001878	323	R-NT2RP2001878	1083
45 NT2RP2001903	F-NT2RP2001903	324	R-NT2RP2001903	1084
NT2RP2001915	F-NT2RP2001915	325	R-NT2RP2001915	1085
NT2RP2001921	F-NT2RP2001921	326	R-NT2RP2001921	1086
NT2RP2001948	F-NT2RP2001948	327	R-NT2RP2001948	1087
NT2RP2001956	F-NT2RP2001956	328	R-NT2RP2001956	1088
50 NT2RP2002015	F-NT2RP2002015	329	R-NT2RP2002015	1089
NT2RP2002063	F-NT2RP2002063	330	R-NT2RP2002063	1090
NT2RP2002188	F-NT2RP2002188	331	R-NT2RP2002188	1091
NT2RP2002232	F-NT2RP2002232	332	R-NT2RP2002232	1092
NT2RP2002304	F-NT2RP2002304	333	R-nnnnnnnnnnnnn	1093
55 NT2RP2002409	F-NT2RP2002409	334	R-NT2RP2002409	1094
NT2RP2002510	F-NT2RP2002510	335	R-NT2RP2002510	1095

Table 1 (continued)

Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
5 NT2RP2002527	F-NT2RP2002527	336	R-NT2RP2002527	1096
NT2RP2002533	F-NT2RP2002533	337	R-NT2RP2002533	1097
NT2RP2002564	F-NT2RP2002564	338	R-NT2RP2002564	1098
NT2RP2002674	F-NT2RP2002674	339	R-NT2RP2002674	1099
NT2RP2002721	F-NT2RP2002721	340	R-NT2RP2002721	1100
10 NT2RP2002824	F-NT2RP2002824	341	R-NT2RP2002824	1101
NT2RP2002942	F-NT2RP2002942	342	R-NT2RP2002942	1102
NT2RP2002974	F-NT2RP2002974	343	R-NT2RP2002974	1103
NT2RP2002976	F-NT2RP2002976	344	R-NT2RP2002976	1104
15 NT2RP2003042	F-NT2RP2003042	345	R-NT2RP2003042	1105
NT2RP2003138	F-NT2RP2003138	346		
NT2RP2003179	F-NT2RP2003179	347	R-NT2RP2003179	1106
NT2RP2003210	F-NT2RP2003210	348	R-NT2RP2003210	1107
NT2RP2003302	F-NT2RP2003302	349	R-NT2RP2003302	1108
20 NT2RP2003369	F-NT2RP2003369	350	R-NT2RP2003369	1109
NT2RP2003383	F-NT2RP2003383	351	R-NT2RP2003383	1110
NT2RP2003390	F-NT2RP2003390	352	R-NT2RP2003390	1111
NT2RP2003469	F-NT2RP2003469	353	R-NT2RP2003469	1112
25 NT2RP2003545	F-NT2RP2003545	354	R-NT2RP2003545	1113
NT2RP2003593	F-NT2RP2003593	355	R-NT2RP2003593	1114
NT2RP2003599	F-NT2RP2003599	356	R-NT2RP2003599	1115
NT2RP2003655	F-NT2RP2003655	357	R-NT2RP2003655	1116
NT2RP2003664	F-NT2RP2003664	358	R-NT2RP2003664	1117
30 NT2RP2003931	F-NT2RP2003931	359	R-NT2RP2003931	1118
NT2RP2003940	F-NT2RP2003940	360	R-NT2RP2003940	1119
NT2RP2003950	F-NT2RP2003950	361	R-NT2RP2003950	1120
NT2RP2004069	F-NT2RP2004069	362	R-NT2RP2004069	1121
35 NT2RP2004108	F-NT2RP2004108	363	R-NT2RP2004108	1122
NT2RP2004141	F-NT2RP2004141	364	R-NT2RP2004141	1123
NT2RP2004179	F-NT2RP2004179	365	R-NT2RP2004179	1124
NT2RP2004205	F-NT2RP2004205	366	R-NT2RP2004205	1125
NT2RP2004447	F-NT2RP2004447	367	R-NT2RP2004447	1126
40 NT2RP2004495	F-NT2RP2004495	368	R-NT2RP2004495	1127
NT2RP2004524	F-NT2RP2004524	369	R-NT2RP2004524	1128
NT2RP2004556	F-NT2RP2004556	370	R-NT2RP2004556	1129
NT2RP2004606	F-NT2RP2004606	371	R-NT2RP2004606	1130
45 NT2RP2004648	F-NT2RP2004648	372	R-NT2RP2004648	1131
NT2RP2004670	F-NT2RP2004670	373	R-NT2RP2004670	1132
NT2RP2004794	F-NT2RP2004794	374	R-NT2RP2004794	1133
NT2RP2004837	F-NT2RP2004837	375	R-NT2RP2004837	1134
NT2RP2004847	F-NT2RP2004847	376	R-NT2RP2004847	1135
50 NT2RP2005027	F-NT2RP2005027	377	R-NT2RP2005027	1136
NT2RP2005069	F-NT2RP2005069	378	R-NT2RP2005069	1137
NT2RP2005163	F-NT2RP2005163	379	R-NT2RP2005163	1138
NT2RP2005181	F-NT2RP2005181	380	R-NT2RP2005181	1139
NT2RP2005247	F-NT2RP2005247	381	R-NT2RP2005247	1140
55 NT2RP2005378	F-NT2RP2005378	382	R-NT2RP2005378	1141
NT2RP2005391	F-NT2RP2005391	383	R-NT2RP2005391	1142

Table 1 (continued)

Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
5 NT2RP2005425	F-NT2RP2005425	384	R-NT2RP2005425	1143
NT2RP2005463	F-NT2RP2005463	385	R-NT2RP2005463	1144
NT2RP2005514	F-NT2RP2005514	386	R-NT2RP2005514	1145
NT2RP2005535	F-NT2RP2005535	387	R-NT2RP2005535	1146
NT2RP2005541	F-NT2RP2005541	388	R-NT2RP2005541	1147
10 NT2RP2005597	F-NT2RP2005597	389	R-NT2RP2005597	1148
NT2RP2005632	F-NT2RP2005632	390	R-ntntntntntntntntntnt	1149
NT2RP2005666	F-NT2RP2005666	391	R-NT2RP2005666	1150
NT2RP2005774	F-NT2RP2005774	392	R-NT2RP2005774	1151
15 NT2RP2005878	F-NT2RP2005878	393	R-NT2RP2005878	1152
NT2RP2005883	F-NT2RP2005883	394	R-NT2RP2005883	1153
NT2RP2005887	F-NT2RP2005887	395	R-NT2RP2005887	1154
NT2RP2005941	F-NT2RP2005941	396	R-ntntntntntntntntntnt	1155
NT2RP2005994	F-NT2RP2005994	397	R-NT2RP2005994	1156
20 NT2RP2006004	F-NT2RP2006004	398	R-NT2RP2006004	1157
NT2RP2006042	F-NT2RP2006042	399	R-NT2RP2006042	1158
NT2RP2006092	F-NT2RP2006092	400	R-NT2RP2006092	1159
NT2RP2006099	F-NT2RP2006099	401	R-NT2RP2006099	1160
25 NT2RP2006134	F-NT2RP2006134	402	R-NT2RP2006134	1161
NT2RP2006269	F-NT2RP2006269	403	R-NT2RP2006269	1162
NT2RP2006512	F-NT2RP2006512	404	R-NT2RP2006512	1163
NT2RP3000011	F-NT2RP3000011	405	R-NT2RP3000011	1164
NT2RP3000022	F-NT2RP3000022	406	R-NT2RP3000022	1165
30 NT2RP3000059	F-NT2RP3000059	407	R-NT2RP3000059	1166
NT2RP3000063	F-NT2RP3000063	408	R-NT2RP3000063	1167
NT2RP3000125	F-NT2RP3000125	409	R-ntntntntntntntntntnt	1168
NT2RP3000148	F-NT2RP3000148	410	R-NT2RP3000148	1169
35 NT2RP3000169	F-NT2RP3000169	411	R-NT2RP3000169	1170
NT2RP3000171	F-NT2RP3000171	412	R-NT2RP3000171	1171
NT2RP3000172	F-NT2RP3000172	413	R-NT2RP3000172	1172
NT2RP3000201	F-NT2RP3000201	414	R-NT2RP3000201	1173
NT2RP3000232	F-NT2RP3000232	415	R-NT2RP3000232	1174
40 NT2RP3000304	F-NT2RP3000304	416	R-NT2RP3000304	1175
NT2RP3000378	F-NT2RP3000378	417	R-NT2RP3000378	1176
NT2RP3000427	F-NT2RP3000427	418		
NT2RP3000436	F-NT2RP3000436	419	R-NT2RP3000436	1177
45 NT2RP3000444	F-NT2RP3000444	420	R-NT2RP3000444	1178
NT2RP3000460	F-NT2RP3000460	421	R-NT2RP3000460	1179
NT2RP3000481	F-NT2RP3000481	422	R-NT2RP3000481	1180
NT2RP3000616	F-NT2RP3000616	423	R-NT2RP3000616	1181
NT2RP3000645	F-NT2RP3000645	424	R-NT2RP3000645	1182
50 NT2RP3000652	F-NT2RP3000652	425	R-NT2RP3000652	1183
NT2RP3000676	F-NT2RP3000676	426	R-NT2RP3000676	1184
NT2RP3000677	F-NT2RP3000677	427	R-NT2RP3000677	1185
NT2RP3000721	F-NT2RP3000721	428	R-NT2RP3000721	1186
NT2RP3000789	F-NT2RP3000789	429	R-NT2RP3000789	1187
55 NT2RP3000818	F-NT2RP3000818	430	R-NT2RP3000818	1188
NT2RP3000820	F-NT2RP3000820	431	R-NT2RP3000820	1189

Table 1 (continued)

table 1 (continued)				
Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
NT2RP3000838	F-NT2RP3000838	432	R-NT2RP3000838	1190
NT2RP3000871	F-NT2RP3000871	433	R-NT2RP3000871	1191
NT2RP3000907	F-NT2RP3000907	434	R-NT2RP3000907	1192
NT2RP3000921	F-NT2RP3000921	435	R-NT2RP3000921	1193
NT2RP3001012	F-NT2RP3001012	436	R-NT2RP3001012	1194
NT2RP3001044	F-NT2RP3001044	437	R-NT2RP3001044	1195
NT2RP3001061	F-NT2RP3001061	438	R-NT2RP3001061	1196
NT2RP3001159	F-NT2RP3001159	439	R-NT2RP3001159	1197
NT2RP3001170	F-NT2RP3001170	440	R-NT2RP3001170	1198
NT2RP3001195	F-NT2RP3001195	441	R-NT2RP3001195	1199
NT2RP3001240	F-NT2RP3001240	442	R-NT2RP3001240	1200
NT2RP3001271	F-NT2RP3001271	443	R-NT2RP3001271	1201
NT2RP3001322	F-NT2RP3001322	444	R-NT2RP3001322	1202
NT2RP3001388	F-NT2RP3001388	445		
NT2RP3001542	F-NT2RP3001542	446	R-NT2RP3001542	1203
NT2RP3001560	F-NT2RP3001560	447	R-NT2RP3001560	1204
NT2RP3001592	F-NT2RP3001592	448	R-NT2RP3001592	1205
NT2RP3001650	F-NT2RP3001650	449		
NT2RP3001685	F-NT2RP3001685	450	R-NT2RP3001685	1206
NT2RP3001738	F-NT2RP3001738	451	R-NT2RP3001738	1207
NT2RP3001754	F-NT2RP3001754	452	R-NT2RP3001754	1208
NT2RP3001858	F-NT2RP3001858	453	R-NT2RP3001858	1209
NT2RP3001976	F-NT2RP3001976	454	R-NT2RP3001976	1210
NT2RP3002015	F-NT2RP3002015	455	R-NT2RP3002015	1211
NT2RP3002160	F-NT2RP3002160	456	R-NT2RP3002160	1212
NT2RP3002281	F-NT2RP3002281	457	R-NT2RP3002281	1213
NT2RP3002286	F-NT2RP3002286	458	R-NT2RP3002286	1214
NT2RP3002311	F-NT2RP3002311	459	R-NT2RP3002311	1215
NT2RP3002324	F-NT2RP3002324	460	R-NT2RP3002324	1216
NT2RP3002342	F-NT2RP3002342	461	R-NT2RP3002342	1217
NT2RP3002353	F-NT2RP3002353	462	R-NT2RP3002353	1218
NT2RP3002409	F-NT2RP3002409	463	R-NT2RP3002409	1219
NT2RP3002411	F-NT2RP3002411	464	R-NT2RP3002411	1220
NT2RP3002448	F-NT2RP3002448	465	R-NT2RP3002448	1221
NT2RP3002571	F-NT2RP3002571	466	R-NT2RP3002571	1222
NT2RP3002664	F-NT2RP3002664	467	R-NT2RP3002664	1223
NT2RP3002721	F-NT2RP3002721	468	R-NT2RP3002721	1224
NT2RP3002737	F-NT2RP3002737	469	R-NT2RP3002737	1225
NT2RP3002738	F-NT2RP3002738	470	R-NT2RP3002738	1226
NT2RP3002790	F-NT2RP3002790	471	R-NT2RP3002790	1227
NT2RP3002836	F-NT2RP3002836	472	R-NT2RP3002836	1228
NT2RP3002887	F-NT2RP3002887	473	R-NT2RP3002887	1229
NT2RP3002900	F-NT2RP3002900	474	R-NT2RP3002900	1230
NT2RP3002958	F-NT2RP3002958	475	R-NT2RP3002958	1231
NT2RP3002983	F-NT2RP3002983	476	R-NT2RP3002983	1232
NT2RP3003000	F-NT2RP3003000	477	R-NT2RP3003000	1233
NT2RP3003076	F-NT2RP3003076	478	R-NT2RP3003076	1234
NT2RP3003354	F-NT2RP3003354	479	R-NT2RP3003354	1235

Table 1 (continued)

Table 1 (continued)				
Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
OVARC1000003	F-OVARC1000003	528	R-OVARC1000003	1281
OVARC1000090	F-OVARC1000090	529	R-OVARC1000090	1282
OVARC1000105	F-OVARC1000105	530	R-OVARC1000105	1283
OVARC1000137	F-OVARC1000137	531	R-OVARC1000137	1284
OVARC1000208	F-OVARC1000208	532	R-OVARC1000208	1285
OVARC1000255	F-OVARC1000255	533	R-OVARC1000255	1286
OVARC1000275	F-OVARC1000275	534	R-OVARC1000275	1287
OVARC1000298	F-OVARC1000298	535	R-OVARC1000298	1288
OVARC1000307	F-OVARC1000307	536	R-OVARC1000307	1289
OVARC1000313	F-OVARC1000313	537	R-OVARC1000313	1290
OVARC1000331	F-OVARC1000331	538	R-OVARC1000331	1291
OVARC1000410	F-OVARC1000410	539	R-OVARC1000410	1292
OVARC1000439	F-OVARC1000439	540	R-OVARC1000439	1293
OVARC1000467	F-OVARC1000467	541	R-OVARC1000467	1294
OVARC1000529	F-OVARC1000529	542	R-OVARC1000529	1295
OVARC1000553	F-OVARC1000553	543	R-OVARC1000553	1296
OVARC1000775	F-OVARC1000775	544	R-OVARC1000775	1297
OVARC1000811	F-OVARC1000811	545	R-OVARC1000811	1298
OVARC1000853	F-OVARC1000853	546	R-OVARC1000853	1299
OVARC1000873	F-OVARC1000873	547	R-OVARC1000873	1300
OVARC1000916	F-OVARC1000916	548	R-OVARC1000916	1301
OVARC1000956	F-OVARC1000956	549	R-OVARC1000956	1302
OVARC1000995	F-OVARC1000995	550	R-OVARC1000995	1303
OVARC1001030	F-OVARC1001030	551	R-OVARC1001030	1304
OVARC1001049	F-OVARC1001049	552	R-OVARC1001049	1305
OVARC1001086	F-OVARC1001086	553	R-OVARC1001086	1306
OVARC1001132	F-OVARC1001132	554	R-OVARC1001132	1307
OVARC1001163	F-OVARC1001163	555	R-OVARC1001163	1308
OVARC1001222	F-OVARC1001222	556	R-OVARC1001222	1309
OVARC1001260	F-OVARC1001260	557	R-OVARC1001260	1310
OVARC1001336	F-OVARC1001336	558	R-OVARC1001336	1311
OVARC1001338	F-OVARC1001338	559	R-OVARC1001338	1312
OVARC1001569	F-OVARC1001569	560	R-OVARC1001569	1313
OVARC1001570	F-OVARC1001570	561	R-OVARC1001570	1314
OVARC1001596	F-OVARC1001596	562	R-OVARC1001596	1315
OVARC1001607	F-OVARC1001607	563	R-OVARC1001607	1316
OVARC1001725	F-OVARC1001725	564	R-OVARC1001725	1317
OVARC1001727	F-OVARC1001727	565	R-OVARC1001727	1318
OVARC1001807	F-OVARC1001807	566	R-OVARC1001807	1319
OVARC1001833	F-OVARC1001833	567	R-OVARC1001833	1320
OVARC1001952	F-OVARC1001952	568		
OVARC1001991	F-OVARC1001991	569	R-OVARC1001991	1321
OVARC1002058	F-OVARC1002058	570	R-OVARC1002058	1322
OVARC1002178	F-OVARC1002178	571	R-OVARC1002178	1323
PLACE 1000033	F-PLACE1000033	572	R-PLACE1000033	1324
PLACE 1000231	F-PLACE1000231	573	R-PLACE1000231	1325
PLACE 1000258	F-PLACE1000258	574	R-PLACE1000258	1326
PLACE 1000442	F-PLACE1000442	575	R-PLACE1000442	1327

Table 1 (continued)

Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
PLACE 1000560	F-PLACE1000560	576	R-PLACE1000560	1328
PLACE 1000740	F-PLACE1000740	577	R-PLACE1000740	1329
PLACE 1000907	F-PLACE1000907	578		
PLACE 1000912	F-PLACE1000912	579	R-PLACE1000912	1330
PLACE 1000914	F-PLACE1000914	580	R-PLACE1000914	1331
PLACE 1000927	F-PLACE1000927	581	R-PLACE1000927	1332
PLACE 1000986	F-PLACE1000986	582	R-PLACE1000986	1333
PLACE1001016	F-PLACE1001016	583	R-PLACE1001016	1334
PLACE 1001100	F-PLACE1001100	584	R-PLACE1001100	1335
PLACE 1001114	F-PLACE1001114	585	R-PLACE1001114	1336
PLACE 1001123	F-PLACE1001123	586	R-PLACE1001123	1337
PLACE 1001183	F-PLACE1001183	587	R-PLACE1001183	1338
PLACE 1001229	F-PLACE1001229	588	R-PLACE1001229	1339
PLACE 1001231	F-PLACE1001231	589	R-PLACE1001231	1340
PLACE 1001340	F-PLACE1001340	590	R-PLACE1001340	1341
PLACE1001401	F-PLACE1001401	591	R-PLACE1001401	1342
PLACE 1001407	F-PLACE1001407	592	R-PLACE1001407	1343
PLACE 1001464	F-PLACE1001464	593	R-PLACE1001464	1344
PLACE1001500	F-PLACE1001500	594	R-PLACE1001500	1345
PLACE1001516	F-PLACE1001516	595	R-PLACE1001516	1346
PLACE1001536	F-PLACE1001536	596	R-PLACE1001536	1347
PLACE 1001564	F-PLACE1001564	597	R-PLACE1001564	1348
PLACE 1001655	F-PLACE1001655	598	R-PLACE1001655	1349
PLACE 1001788	F-PLACE1001788	599	R-PLACE1001788	1350
PLACE1001795	F-PLACE1001795	600	R-PLACE1001795	1351
PLACE1001836	F-PLACE1001836	601	R-PLACE1001836	1352
PLACE 1001918	F-PLACE1001918	602	R-PLACE1001918	1353
PLACE 1001949	F-PLACE1001949	603	R-PLACE1001949	1354
PLACE 1002080	F-PLACE1002080	604	R-PLACE1002080	1355
PLACE 1002095	F-PLACE1002095	605	R-PLACE1002095	1356
PLACE 1002153	F-PLACE1002153	606	R-PLACE1002153	1357
PLACE 1002329	F-PLACE1002329	607	R-PLACE1002329	1358
PLACE 1002355	F-PLACE1002355	608	R-PLACE1002355	1359
PLACE1002374	F-PLACE1002374	609	R-PLACE1002374	1360
PLACE 1002518	F-PLACE1002518	610	R-PLACE1002518	1361
PLACE 1002547	F-PLACE1002547	611	R-PLACE1002547	1362
PLACE 1002726	F-PLACE1002726	612	R-PLACE1002726	1363
PLACE 1002905	F-PLACE1002905	613	R-PLACE1002905	1364
PLACE 1002911	F-PLACE1002911	614	R-PLACE1002911	1365
PLACE 1002967	F-PLACE1002967	615	R-PLACE1002967	1366
PLACE 1003135	F-PLACE1003135	616	R-PLACE1003135	1367
PLACE1003163	F-PLACE1003163	617	R-PLACE1003163	1368
PLACE 1003407	F-PLACE1003407	618	R-PLACE1003407	1369
PLACE 1003428	F-PLACE1003428	619	R-PLACE1003428	1370
PLACE1003438	F-PLACE1003438	620	R-PLACE1003438	1371
PLACE 1003460	F-PLACE1003460	621	R-PLACE1003460	1372
PLACE 1003529	F-PLACE1003529	622	R-nnnnnnnnnnnnn	1373
PLACE 1003573	F-PLACE1003573	623	R-PLACE1003573	1374

Table 1 (continued)

Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
PLACE 1003598	F-PLACE1003598	624	R-PLACE1003598	1375
PLACE1003644	F-PLACE1003644	625	R-PLACE1003644	1376
PLACE1003737	F-PLACE1003737	626	R-PLACE1003737	1377
PLACE 1003772	F-PLACE1003772	627	R-PLACE1003772	1378
PLACE 1003839	F-PLACE1003839	628	R-PLACE1003839	1379
PLACE 1003845	F-PLACE1003845	629	R-PLACE1003845	1380
PLACE 1003 852	F-PLACE1003852	630	R-PLACE1003852	1381
PLACE 1004028	F-PLACE1004028	631	R-PLACE1004028	1382
PLACE 1004078	F-PLACE1004078	632	R-PLACE1004078	1383
PLACE1004166	F-PLACE1004166	633	R-PLACE1004166	1384
PLACE 1004168	F-PLACE1004168	634	R-nnnnnnnnnnnnn	1385
PLACE1004199	F-PLACE1004199	635	R-PLACE1004199	1386
PLACE 1004279	F-PLACE1004279	636	R-PLACE1004279	1387
PLACE 1004282	F-PLACE1004282	637	R-PLACE1004282	1388
PLACE 1004305	F-PLACE1004305	638	R-PLACE1004305	1389
PLACE 1004441	F-PLACE1004441	639	R-PLACE1004441	1390
PLACE 1004450	F-PLACE1004450	640	R-PLACE1004450	1391
PLACE 1004482	F-PLACE1004482	641	R-PLACE1004482	1392
PLACE 1004492	F-PLACE1004492	642	R-PLACE1004492	1393
PLACE 1004519	F-PLACE1004519	643	R-PLACE1004519	1394
PLACE 1004520	F-PLACE1004520	644	R-PLACE1004520	1395
PLACE 1004630	F-PLACE1004630	645	R-PLACE1004630	1396
PLACE 1004637	F-PLACE1004637	646	R-PLACE1004637	1397
PLACE 1004648	F-PLACE1004648	647	R-PLACE1004648	1398
PLACE 1004816	F-PLACE1004816	648	R-PLACE1004816	1399
PLACE 1004887	F-PLACE1004887	649	R-PLACE1004887	1400
PLACE 1005003	F-PLACE1005003	650	R-PLACE1005003	1401
PLACE 1005005	F-PLACE1005005	651	R-PLACE1005005	1402
PLACE 1005031	F-PLACE1005031	652	R-PLACE1005031	1403
PLACE 1005239	F-PLACE1005239	653	R-PLACE1005239	1404
PLACE 1005250	F-PLACE1005250	654	R-PLACE1005250	1405
PLACE 1005383	F-PLACE1005383	655	R-PLACE1005383	1406
PLACE 1005410	F-PLACE1005410	656	R-PLACE1005410	1407
PLACE 1005426	F-PLACE1005426	657	R-PLACE1005426	1408
PLACE 1005519	F-PLACE1005519	658	R-PLACE1005519	1409
PLACE 1005539	F-PLACE1005539	659	R-PLACE1005539	1410
PLACE 1005544	F-PLACE1005544	660	R-PLACE1005544	1411
PLACE 1005569	F-PLACE1005569	661	R-PLACE1005569	1412
PLACE 1005601	F-PLACE1005601	662	R-PLACE1005601	1413
PLACE 1005660	F-PLACE1005660	663	R-PLACE1005660	1414
PLACE 1005669	F-PLACE1005669	664	R-PLACE1005669	1415
PLACE 1005682	F-PLACE1005682	665	R-PLACE1005682	1416
PLACE 1005725	F-PLACE1005725	666	R-PLACE1005725	1417
PLACE 1005736	F-PLACE1005736	667	R-PLACE1005736	1418
PLACE 1005745	F-PLACE1005745	668	R-PLACE1005745	1419
PLACE 1005768	F-PLACE1005768	669	R-PLACE1005768	1420
PLACE1005815	F-PLACE1005815	670	R-PLACE1005815	1421
PLACE 1005878	F-PLACE1005878	671	R-PLACE1005878	1422

Table 1 (continued)

Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
PLACE 1005927	F-PLACE1005927	672	R-PLACE1005927	1423
PLACE 1006071	F-PLACE1006071	673	R-PLACE1006071	1424
PLACE 1006073	F-PLACE1006073	674	R-PLACE1006073	1425
PLACE 1006079	F-PLACE1006079	675	R-PLACE1006079	1426
PLACE 1006093	F-PLACE1006093	676	R-PLACE1006093	1427
PLACE 1006208	F-PLACE1006208	677	R-nnnnnnnnnnnnn	1428
PLACE 1006219	F-PLACE1006219	678	R-PLACE1006219	1429
PLACE 1006277	F-PLACE1006277	679	R-PLACE1006277	1430
PLACE 1006290	F-PLACE1006290	680	R-PLACE1006290	1431
PLACE 1006443	F-PLACE1006443	681	R-PLACE1006443	1432
PLACE 1006515	F-PLACE1006515	682	R-PLACE1006515	1433
PLACE 1006716	F-PLACE1006716	683	R-PLACE1006716	1434
PLACE 1006786	F-PLACE1006786	684	R-PLACE1006786	1435
PLACE 1006809	F-PLACE1006809	685	R-PLACE1006809	1436
PLACE 1006959	F-PLACE1006959	686	R-PLACE1006959	1437
PLACE 1007028	F-PLACE1007028	687	R-PLACE1007028	1438
PLACE 1007040	F-PLACE1007040	688	R-PLACE1007040	1439
PLACE 1007077	F-PLACE1007077	689	R-PLACE1007077	1440
PLACE 1007081	F-PLACE1007081	690	R-PLACE1007081	1441
PLACE 1007096	F-PLACE1007096	691	R-PLACE1007096	1442
PLACE 1007296	F-PLACE1007296	692	R-PLACE1007296	1443
PLACE 1007591	F-PLACE1007591	693	R-PLACE1007591	1444
PLACE1007626	F-PLACE1007626	694	R-PLACE1007626	1445
PLACE 1007702	F-PLACE1007702	695	R-PLACE1007702	1446
PLACE1007845	F-PLACE1007845	696	R-PLACE1007845	1447
PLACE1007881	F-PLACE1007881	697	R-PLACE1007881	1448
PLACE 1007971	F-PLACE1007971	698	R-PLACE1007971	1449
PLACE 1008282	F-PLACE1008282	699	R-PLACE1008282	1450
PLACE 1008297	F-PLACE1008297	700	R-PLACE1008297	1451
PLACE 1008359	F-PLACE1008359	701	R-PLACE1008359	1452
PLACE 1008469	F-PLACE1008469	702	R-PLACE1008469	1453
PLACE 1008549	F-PLACE1008549	703	R-PLACE1008549	1454
PLACE 1008657	F-PLACE1008657	704	R-PLACE1008657	1455
PLACE 1008716	F-PLACE1008716	705	R-PLACE1008716	1456
PLACE 1008744	F-PLACE1008744	706	R-PLACE1008744	1457
PLACE 1008984	F-PLACE1008984	707	R-PLACE1008984	1458
PLACE 1008985	F-PLACE1008985	708	R-PLACE1008985	1459
PLACE 1009067	F-PLACE1009067	709	R-PLACE1009067	1460
PLACE 1009196	F-PLACE1009196	710	R-PLACE1009196	1461
PLACE 1009279	F-PLACE1009279	711	R-PLACE1009279	1462
PLACE 1009527	F-PLACE1009527	712	R-PLACE1009527	1463
PLACE 1009546	F-PLACE1009546	713	R-PLACE1009546	1464
PLACE 1009600	F-PLACE1009600	714	R-PLACE1009600	1465
PLACE 1009735	F-PLACE1009735	715	R-PLACE1009735	1466
PLACE 1009982	F-PLACE1009982	716	R-nnnnnnnnnnnnn	1467
PLACE1010011	F-PLACE1010011	717	R-PLACE1010011	1468
PLACE1010078	F-PLACE1010078	718	R-PLACE1010078	1469
PLACE1010081	F-PLACE1010081	719	R-PLACE1010081	1470

Table 1 (continued)

Table 1 (continued)				
Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
PLACE 1010251	F-PLACE1010251	720	R-PLACE1010251	1471
PLACE1010445	F-PLACE1010445	721	R-PLACE1010445	1472
PLACE 1010713	F-PLACE1010713	722	R-PLACE1010713	1473
PLACE 1010784	F-PLACE1010784	723	R-PLACE1010784	1474
PLACE 1010827	F-PLACE1010827	724	R-PLACE1010827	1475
PLACE 1010968	F-PLACE1010968	725	R-PLACE1010968	1476
PLACE 1011045	F-PLACE1011045	726	R-PLACE1011045	1477
PLACE1011116	F-PLACE1011116	727	R-PLACE1011116	1478
PLACE1011181	F-PLACE1011181	728		
PLACE1011236	F-PLACE1011236	729	R-PLACE1011236	1479
PLACE 1011364	F-PLACE1011364	730	R-PLACE1011364	1480
PLACE 1 011407	F-PLACE1011407	731	R-PLACE1011407	1481
PLACE1011516	F-PLACE1011516	732	R-PLACE1011516	1482
PLACE 1011708	F-PLACE1011708	733	R-PLACE1011708	1483
PLACE 1011824	F-PLACE1011824	734	R-PLACE1011824	1484
PLACE 1011978	F-PLACE1011978	735	R-PLACE1011978	1485
PLACE2000118	F-PLACE2000118	736	R-PLACE2000118	1486
PLACE2000219	F-PLACE2000219	737	R-PLACE2000219	1487
PLACE3000181	F-PLACE3000181	738	R-PLACE3000181	1488
PLACE3000213	F-PLACE3000213	739	R-PLACE3000213	1489
PLACE4000354	F-PLACE4000354	740	R-PLACE4000354	1490
PLACE4000455	F-PLACE4000455	741	R-PLACE4000455	1491
SKNMC1000004	F-SKNMC1000004	742		
SKNMC1000014	F-SKNMC1000014	743		
SKNMC1000082	F-SKNMC1000082	744		
THYRO1000036	F-THYRO1000036	745	R-THYRO1000036	1492
THYRO1000061	F-THYRO1000061	746	R-THYRO1000061	1493
THYRO1000099	F-THYRO1000099	747	R-THYRO1000099	1494
THYRO1000196	F-THYRO1000196	748	R-THYRO1000196	1495
THYRO1000400	F-THYRO1000400	749	R-THYRO1000400	1496
THYRO1000580	F-THYRO1000580	750	R-THYRO1000580	1497
THYRO1000584	F-THYRO1000584	751	R-THYRO1000584	1498
THYRO1000678	F-THYRO1000678	752	R-THYRO1000678	1499
THYRO1000776	F-THYRO1000776	753	R-THYRO1000776	1500
THYRO1000795	F-THYRO1000795	754	R-THYRO1000795	1501
THYRO1000846	F-THYRO1000846	755	R-THYRO1000846	1502
THYRO1000866	F-THYRO1000866	756	R-THYRO1000866	1503
THYRO1000956	F-THYRO1000956	757	R-THYRO1000956	1504
THYRO1000964	F-THYRO1000964	758	R-THYRO1000964	1505
THYRO1000999	F-THYRO1000999	759	R-THYRO1000999	1506
THYRO1001063	F-THYRO1001063	760	R-THYRO1001063	1507
THYRO1001071	F-THYRO1001071	761	R-THYRO1001071	1508
THYRO1001102	F-THYRO1001102	762	R-THYRO1001102	1509
THYRO1001113	F-THYRO1001113	763	R-THYRO1001113	1510
THYRO1001128	F-THYRO1001128	764	R-THYRO1001128	1511
THYRO1001205	F-THYRO1001205	765	R-THYRO1001205	1512
THYRO1001237	F-THYRO1001237	766	R-THYRO1001237	1513
THYRO1001242	F-THYRO1001242	767	R-THYRO1001242	1514

Table 1 (continued)

Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
5	THYRO1001266	768	R-THYRO1001266	1515
	THYRO1001327	769	R-THYRO1001327	1516
	THYRO1001456	770	R-THYRO1001456	1517
	THYRO1001457	771	R-THYRO1001457	1518
	THYRO1001471	772	R-THYRO1001471	1519
10	THYRO1001478	773	R-THYRO1001478	1520
	THYRO1001495	774	R-THYRO1001495	1521
	THYRO1001523	775	R-THYRO1001523	1522
	THYRO1001529	776	R-THYRO1001529	1523
15	THYRO1001593	777	R-THYRO1001593	1524
	THYRO1001608	778	R-THYRO1001608	1525
	THYRO1001641	779	R-THYRO1001641	1526
	THYRO1001700	780	R-THYRO1001700	1527
	THYRO1001702	781	R-THYRO1001702	1528
20	THYRO1001725	782	R-THYRO1001725	1529
	THYRO1001770	783	R-THYRO1001770	1530
	THYRO1001803	784	R-THYRO1001803	1531
	Y79AA1000030	785	R-Y79AA1000030	1532
25	Y79AA1000127	786	R-Y79AA1000127	1533
	Y79AA1000207	787	R-Y79AA1000207	1534
	Y79AA1000226	788	R-Y79AA1000226	1535
	Y79AA1000270	789	R-Y79AA1000270	1536
	Y79AA1000426	790	R-Y79AA1000426	1537
30	Y79AA1000521	791	R-Y79AA1000521	1538
	Y79AA1000750	792	R-Y79AA1000750	1539
	Y79AA1000776	793	R-Y79AA1000776	1540
	Y79AA1000777	794	R-Y79AA1000777	1541
35	Y79AA1000876	795	R-Y79AA1000876	1542
	Y79AA1000888	796		
	Y79AA1000959	797	R-Y79AA1000959	1543
	Y79AA1000967	798	R-Y79AA1000967	1544
	Y79AA1001013	799	R-Y79AA1001013	1545
40	Y79AA1001056	800	R-Y79AA1001056	1546
	Y79AA1001062	801	R-Y79AA1001062	1547
	Y79AA1001090	802	R-Y79AA1001090	1548
	Y79AA1001212	803	R-Y79AA1001212	1549
45	Y79AA1001264	804	R-Y79AA1001264	1550
	Y79AA1001272	805	R-Y79AA1001272	1551
	Y79AA1001328	806	R-Y79AA1001328	1552
	Y79AA1001426	807	R-Y79AA1001426	1553
	Y79AA1001427	808		
50	Y79AA1001430	809	R-Y79AA1001430	1554
	Y79AA1001523	810	R-Y79AA1001523	1555
	Y79AA1001530	811	R-Y79AA1001530	1556
	Y79AA1001592	812	R-Y79AA1001592	1557
	Y79AA1001727	813	R-Y79AA1001727	1558
55	Y79AA1001787	814	R-Y79AA1001787	1559
	Y79AA1001793	815		

Table 1 (continued)

Correspondence between names of clone and the sequence name, and the SEQ ID.				
Name of clone	Name of 5'-sequence	SEQ ID	3 Name of 3'-sequence	SEQ ID
Y79AA1001795	F-Y79AA1001795	816	R-Y79AA1001795	1560
Y79AA1001799	F-Y79AA1001799	817	R-Y79AA1001799	1561
Y79AA1001803	F-Y79AA1001803	818	R-Y79AA1001803	1562
Y79AA1001863	F-Y79AA1001863	819	R-Y79AA1001863	1563
Y79AA1002022	F-Y79AA1002022	820	R-Y79AA1002022	1564
Y79AA1002058	F-Y79AA1002058	821		
Y79AA1002121	F-Y79AA1002121	822	R-nnnnnnnnnnnnn	1565
Y79AA1002129	F-Y79AA1002129	823	R-nnnnnnnnnnnnn	1566
Y79AA1002213	F-Y79AA1002213	824	R-Y79AA1002213	1567
Y79AA1002334	F-Y79AA1002334	825	R-Y79AA1002334	1568
Y79AA1002373	F-Y79AA1002373	826	R-Y79AA1002373	1569
Y79AA1002376	F-Y79AA1002376	827	R-Y79AA1002376	1570
Y79AA1002378	F-Y79AA1002378	828	R-Y79AA1002378	1571
Y79AA1002381	F-Y79AA1002381	829	R-Y79AA1002381	1572
NT2RP2006580	F-NT2RP2006580	2545	R-NT2RP2006580	2546

The sequence name starting from "F" means the name of 5'-end sequence, and the sequence name starting from "R" means the name of 3'-end sequence. A blank indicates that the 3'-end sequence corresponding to the 5'-end sequence has not been determined in the clone.

[0018] Furthermore, the present invention relates to the use of the above primers, as described below.

(4) A polynucleotide which can be synthesized with the primer set of (2) or (3).

(5) A polynucleotide comprising a coding region in the polynucleotide of (4).

(6) A substantially pure protein encoded by polynucleotide of (4).

(7) A partial peptide of the protein of (6).

[0019] In addition, the present invention comprises a polynucleotide described below and a protein encoded by the polynucleotide.

(8) An isolated polynucleotide selected from the group consisting of

(a) a polynucleotide comprising a coding region of the nucleotide sequence set forth in any one of the SEQ ID NOs in Table 370;

(b) a polynucleotide comprising a nucleotide sequence encoding a protein comprising the amino acid sequence set forth in any one of the SEQ ID NOs in Table 370;

(c) a polynucleotide comprising a nucleotide sequence encoding a protein comprising an amino acid sequence selected from the amino acid sequences set forth in the SEQ ID NOs in Table 370, in which one or more amino acids are substituted, deleted, inserted, and/or added, wherein said protein is functionally equivalent to the protein comprising said amino acid sequence selected from the amino acid sequences set forth in the SEQ ID NOs in Table 370;

(d) a polynucleotide that hybridizes with a polynucleotide comprising a nucleotide sequence selected from the nucleotide sequences set forth in the SEQ ID NOs in Table 370, and that comprises a nucleotide sequence encoding a protein functionally equivalent to the protein encoded by the nucleotide sequence selected from the nucleotide sequences set forth in the SEQ ID NOs in Table 370;

(e) a polynucleotide comprising a nucleotide sequence encoding a partial amino acid sequence of a protein encoded by the polynucleotide of (a) to (d);

(f) a polynucleotide comprising a nucleotide sequence with at least 70% identity to the nucleotide sequence set forth in any one of the SEQ ID NOs in Table 370.

(9). A substantially pure protein encoded by the polynucleotide of (8).

(10) An antibody against the protein or peptide of any one of (6), (7), and (9).

(11) A vector comprising the polynucleotide of (5) or (8).